to the antenna defined in apparatus Claim 1; the MRI system defined by Claim 75 includes an antenna substantially similar to the antenna defined in apparatus Claim 37; the MRI system defined by Claim 76 includes an antenna substantially similar to the antenna defined in apparatus Claim 61; the MRI system defined by Claim 77 includes an antenna substantially similar to the antenna defined in apparatus Claim 70; and the MRI system defined by Claim 85 includes an antenna substantially similar to the antenna defined in apparatus Claim 84. Restriction should not, therefore, be required.

It is noted that in the Office Action, the Examiner has not explained the basis for the restriction requirement. If the Examiner continues the requirement for restriction between Group I and Group II, it is requested that a basis for the restriction requirement be provided.

III. The Election Requirement

The Examiner also required election of one of the following species if Group I is elected:

Group A: Claims 1-18, 22-26, 30-36 and 61-70, disclosing a receiving antenna which comprises inner and outer conductors.

Group B: Claims 19-21, disclosing a receiving antenna which comprises a second winding shielding a first winding.

Group C: Claims 27-29, disclosing detecting means, receiving means and shielding means.

Group D: Claims 37-40, disclosing three coaxial cable units tuned to the same frequency.

Group E: Claims 41-60, disclosing coaxial cables supported by a support on a plane.

Group F: Claim 84, disclosing an antenna for transmitting which comprises inner and outer conductors.

The applicant elects the claims of Group A, with traverse. The claims readable on Group A are Claims 1-18, 22-26, 30-36 and 61-70. It is respectfully submitted that Claims 37-40 of Group D, Claims 41-60 of Group E and new Claims 86-88 also read on Group A.

The Examiner asserted that the search required for Groups B-F is not required for Group A. It is respectfully submitted that that is not the case, at least for the claims of Group D and Group E.

The claims of Group D define an MRI antenna comprising three coaxial cable units with inner conductors electrically connected in a particular manner and outer conductors electrically connected in a particular manner, as in Figs. 9-12, for example. The coaxial cable units each comprise inner and outer conductors, as do the claims of Group A. In addition, the MRI antenna defined by claim 33, which is dependant on claim 30, both of which are identified by the Examiner as being part of Group A, requires three coaxial cable units with the inner conductors electrically connected to form a first circuit and the outer conductors electrically connected to form a second circuit, also as in Figs. 9-12, for example. It does not therefore appear that different searches are required between the claims of Group A and Group D. The claims of Group D should be considered along with the claims of Group A. Claim 1 and Claim 30 of Group A are also generic to the claims of Group D.

The claims of Group E define an MRI antenna comprising two or more coaxial cable units supported by a support in a first plane, with inner conductors electrically connected to form a circuit tunable to a frequency and outer conductors electrically connected to form a circuit tunable to the frequency. An MRI antenna as defined by independent Claim 41 and independent Claim 54 of Group E is shown and described with respect to Figs. 13-15, for example. The MRI antenna defined by new claim 86, which is dependant on claim 8 and claim 1, which are identified as Group A by the Examiner, requires that the inner and outer conductors each have two electrically connected sections supported in a same plane by a support, as is also shown and described with respect to Figs. 13-15. A separate search would not, therefore be required for the claims of Group E and Group E should be considered along with the claims of Group A.

While certain of the claims of the Groups have the similarities described above, this is not an admission that those claims or the other claims in the Groups are not patentably distinct.

It is noted that the Examiner has not given a basis for requiring election, other than asserting that the claims are distinct and that separate searches are required. If the Examiner continues to assert that election is required between Groups A, D and E, it is respectfully requested that the Examiner explain why the Groups are considered to be distinct and why separate searches are required.

IV. The New Claims

New Claim 86, which is dependant on Claim 8 and indirectly dependant on claim 1, adds that the MRI antenna further comprises a support that supports the first and second sections defined in Claim 8 in a same plane, as shown and described with respect to the antenna of Figs. 13-15, for example. Being ultimately dependant on independent Claim 1 of Group A, new Claim 86 should be part of of Group A, as well.

New independent Claim 87 and new Claim 88, which is dependent on Claim 87, are in means plus function format. The claims define an MRI antenna comprising detecting means for directly detecting magnetic resonance signals emitted by a subject and receiving means for inductively receiving signals corresponding to the detected magnetic resonance signals from the detecting means and for providing received signals for analysis. The detecting means shields the receiving means from direct detection of the magnetic resonance signals means. The structure in the specification corresponding to these limitations are the inner and outer conductors shown in all the Figures and recited in Claim 1 and the other claims of Group A. New Claims 87 and 88 should, therefore, be considered along with the claims of Group A. It is noted that the MRI antennas defined by the claims of the Groups B-E recite structure corresponding to the means plus function limitations of new Claims 87 and 88, as well.

V. The Amendments

The specification has been amended to provide the serial numbers of the related applications and to clarify the description of the assignee of the provisional application of which the present application claims the benefit.

Claim 9 has been amended to correct a typographical error. The amendment does not narrow the claim.

VI. Conclusion

Reconsideration of the Restriction and Election Requirements and consideration of the new and amended claims are respectfully requested.

Respectfully submitted,
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MARKED UP VERSION OF AMENDMENTS

In the Specification:

The paragraph on page 1, lines 4-6 is amended as follows:

--The present application claims the benefit of U.S.S.N. 60/172,199, filed on December 17, 1999, assigned to the assignee of the present [invention] application and incorporated by reference herein. --

The paragraph on page 1, lines 8-11 is amended as follows:

--The present application is related to U.S.S.N. [_____ (Attorney Docket No. 5007-4048)] 09/738,236, and U.S.S.N. [_____ (Attorney Docket No. 5007-4049)] 09/738,233, both filed on the same day as the present [invention] application, assigned to the assignee of the present [invention] application and incorporated by reference, herein. --

In the Claims:

Claim 9 is amended as follows:

--9. (Amended) The MRI antenna of Claim 8, further comprising a second coaxial cable unit [supported by the support] adjacent to the first coaxial cable unit such that the first and second coaxial cable units are inductively coupled during operation, the second coaxial cable unit comprising a second inner conductor and a second outer conductor, each having first and second ends, respectively, wherein the second outer conductor substantially surrounds the second inner conductor and the first end of the inner conductor is electrically connected to the second end of the inner conductor across a capacitor and the first end of the outer conductor is connected to the second end of the outer conductor across a capacitor;

the second inner conductor comprising a first section between the first end and a third end and a second section between the second end and a fourth end, the third end and the fourth end being electrically connected across a capacitor;

the second outer conductor comprising a first section between the first end and a third end and a second section between the second end and a fourth end, the second and fourth ends being electrically connected across a capacitor. --